ATR user facility workshop planned for September

Photo: ATR

A tour group visits the Advanced Test Reactor. Pools at ATR hold water to temporarily cool and contain fuel used in the reactor.

INL will host the first user workshop for the Advanced Test Reactor National Scientific User Facility (ATR NSUF) September 13 -14, 2007, in Idaho Falls. The workshop is an excellent opportunity for universities, industry, and other federal agencies to learn about the new role that the Department of Energy has identified for the ATR, one of the world's most versatile reactors, and ways that your research programs may benefit from using the ATR research capabilities.

In April 2007, the Department of Energy designated the ATR as a National Scientific User Facility to enhance U.S. leadership in nuclear science and technology. By making ATR more easily accessible to users - including universities, laboratories and industry - the Department is expanding its support of basic and applied nuclear research and development to advance the nation's energy security needs.

The ATR is a pressurized, light-water moderated, beryllium-reflected research reactor located and the INL Reactor Technology Complex. Its ability to produce an extremely high neutron flux makes it possible to subject materials to the equivalent of years of radiation exposure, as would take place in a commercial nuclear reactor, in a matter of weeks or months. The ATR core design allows many experiments to run concurrently, with each experiment receiving a different and carefully controlled level of neutron radiation. Originally commissioned to evaluate fuels and materials performance for the Navy Nuclear Propulsion Program, ATR has proven to be an outstanding research facility over the years.

The workshop will include a tour of the ATR NSUF at the INL desert Site on Thursday, September 13, as well as the following in Idaho Falls:

- Acquaint prospective users with the research capabilities of the ATR and post-irradiation examination facilities through tours and presentations;
- Provide breakout sessions on the research proposal process and obtain feedback on the university experiments that could be supported in FY 2008;
- Provide information about using the ATR NSUF for irradiation experiments with a broad range of materials and components;
- Present plans for a nuclear fuels and materials summer school, which will be open to faculty, students, and industry;
- Introduce concept of shared industry research program; and
- Showcase important research challenges that are currently being addressed by these facilities and investments made by DOE and INL operations contractor to enhance user facility capabilities.

Attendees will be able to tour both the Reactor Technology Center and the Materials and Fuels Complex.

Reactor Technology Complex and the ATR

Located on the INL desert Site, about 50 miles west of Idaho Falls, the ATR is a pressurized light water reactor with a maximum thermal power rating of 250 MW and a maximum unperturbed thermal neutron flux rating of 1.0 1015 n/cm2-s. With the ATR's extremely high neutron flux, experimenters can subject materials to the equivalent of years of radiation exposure in a short time. Because of the ATR core design, many experiments can run concurrently, with each experiment receiving a different and carefully controlled level of neutron radiation. Originally commissioned to evaluate fuels and materials performance for the Navy Nuclear Propulsion Program, the ATR is now available for external customers to use for irradiation experiments with a broad range of materials and components.

Photo: HFEF

A hot-cell environment.

Materials and Fuels Complex

Also west of Idaho Falls on the INL desert Site is the Hot Fuel Examination Facility (HFEF), an integral part of the ATR NSUF, located at the Materials and Fuels Complex. A large, heavily-shielded, alpha-gamma facility designed for remote characterization of highly irradiated fuel and structural materials, the HFEF enables experimenters to conduct post-irradiation examination on nuclear fuel. Characterization options include neutron and X-ray radiography, analytical chemistry for composition and phase structure, transmission electron microscopy, and determination of physical properties.

The deadline for registration is August 31, 2007. Each registrant will receive a packet including a local map, security requirements and detailed meeting and hotel information. INL is coordinating the workshop with the Global 2007 nuclear energy systems and fuel cycles conference in Boise, Idaho, September 9-13, to enable interested individuals to attend both events. INL will provide Global 2007 participants transportation from Boise to Idaho Falls.

Register for the workshop.

General Contact:
Teri Ehresman, (208) 526-7785,

Feature Archive